

## ABSTRACT OF THE DISCLOSURE

A mechanism is described for constructing work granules, where the work granules are constructed independently of whether two or more of the work granules are assigned to operate on a logical storage unit that contains a portion of the same row. A database system  
5 maintains transaction control data for data blocks in a manner that avoids self-deadlocks for slaves that follow a row collision protocol. A row collision protocol is a set of rules or steps that slaves follow to ensure that only one subtransaction in a distributed transaction updates a spanning row. Thus, for a particular spanning row, a single subtransaction modifies all the row pieces of the spanning row in any data block containing any row pieces of the spanning  
10 row. Consequently, a given data block may be affected by multiple subtransactions in a distributed transaction, one subtransaction affecting a row piece in the data block, another subtransaction affecting other rows in the data block.